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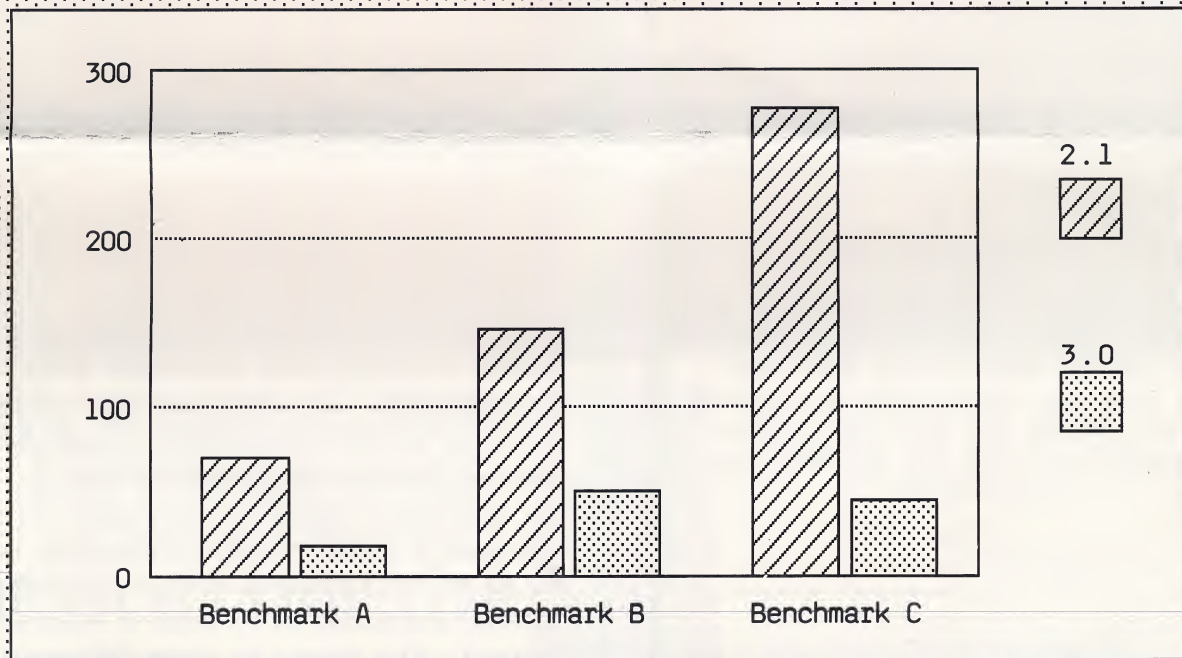
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PRODUCT PROFILES

News And Information For Pick™ Operating System Users

Issue Number 15

June 1985



The Wonders Of A Software Upgrade

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The Wonders Of A Software Upgrade

In our March issue, we gave our impressions of General Automation's Zebra 750, the entry-level model in that company's product line of Pick computers.

Overall, we very much liked the 750 (which has recently been remodeled and is now packaged and sold as the 1750, although its price and configuration remain essentially the same). However, that original review did include three complaints about the software: excessive memory flushing, listing null values last when sorting with right justification, and a too-small type ahead buffer. But now we've received and installed the new 3.0 release of the Zebra software, and it handily dispenses with most of the misgivings we had.

Unfortunately, simply finding out about new Zebra releases can be a matter of luck, since General Automation seems to shun any direct contact with end users, leaving it up to their dealers to tell customers what's new. As a result, some sites are left in the dark about Zebra product changes and improvements, since the lazier dealers don't seem to want to bother informing their customers about new developments. We were especially surprised when our contact at General Automation seemed disinterested in our attempt to generate some additional coverage: he declined to send us the 3.0 release so we could do this follow-up story to our March article, and asked us to order it from a dealer instead. (Our thanks to Vince O'Donnell for finally getting us a copy of the new Zebra release.) At the very least, General Automation should maintain an end user mailing list and periodically send out brief bulletins to inform customers of what's going on and what they can expect from their dealers.

Before we abandoned 2.1, we ran a few benchmarks so we'd be able to tell if 3.0 actually provided any improvement in speed.

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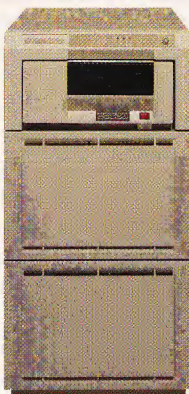


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We immediately repeated the benchmarks after loading 3.0, and found that CPU-bound tests that didn't require any I/O (such as the standard tests frequently demonstrated in *Pragma's* popular Benchmarks department), did not run any faster at all. On the other hand, the problem with excessive memory flushing seems to have disappeared, and operations that *do* require I/O have improved remarkably. For example:

MINUTES:SECONDS	2.1	3.0
SSELECT & SAVE-LIST, FILE A	1:11	:19
SSELECT & SAVE-LIST, FILE B	2:27	:51
ACCOUNT-SAVE	4:37	:45
COMPILE FILE OF PROGRAMS	21:28	18:52

Obviously, a 750 with 3.0 is a real pleasure to use, compared to the old 2.1 release. Unfortunately, null values still list last when

sorted with right justification. On the plus side, the type ahead buffer is now four times larger, so the system always seems to stay well ahead of any fast data entry clerk.

3.0 also offers a number of other new features and facilities. The two major additions that interested us the most are an EXECUTE statement in BASIC programs for invoking TCL commands, and a TCL stacker for remembering, editing and re-executing console commands.

The long list of minor enhancements in 3.0 includes a number of new verbs: DATE for converting dates, BREAK-KEY-ON and -OFF (useful for keeping users from getting trapped in the debugger), RESET-TERM for undoing SET-TERM, TA-ON and -OFF for controlling type ahead, STACK-ON and -OFF for controlling the TCL stacker, DATE-FLAG for setting date formats, RESET-PORT for unlocking blocked processes, XOFF-DISABLE and -ENABLE for controlling port protocols,

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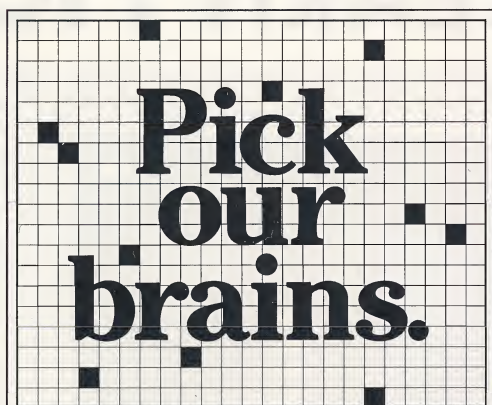
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POKE for forcing input at another port, and a DAILY-MESSAGE capability.

Besides minor changes to a half dozen or so procs, a number of verbs now support new options. The most useful new option for us has been the numeric value in a SELECT, such as SELECT (5), so a search can stop after a certain number of items have been found. That's particularly helpful when you need to find just one occurrence of some data and don't want to go on searching the whole file, as we originally described as Wish #59 in *Pragma* #3 way back in February 1983.

One option we were looking forward to using but couldn't get to work is the (S) option in a COMPARE, for suppressing equal items. Another disappointment was discovering that decimal input conversions don't guarantee a numeric result in one special case (though this deficiency probably already existed in 2.1). For example, ICONV("A2.5","MD2") does nothing, which means programs have to use awkward combinations of R and M conversion codes to prevent non-numeric input.

One interesting new feature is using an argument of 14 with the SYSTEM function to determine the number of bytes in the port's input buffer. Similar to the negative field width option for INPUT statements that Prime Information users have enjoyed for years, SYSTEM(14) allows programs to determine if input is waiting without actually executing an INPUT statement (and possibly hanging if no input is available).

By using SYSTEM(14), a BASIC programmer can design all kinds of interesting programs that weren't previously possible. For example, here's some code that searches a file while reporting its progress any time a key is hit:

```
OPEN "FILE" ELSE STOP
SELECT
PROMPT "" ; FOUND = 0
100 READNEXT ID ELSE STOP
READ ITEM FROM ID ELSE STOP
IF INDEX(ITEM,"ERROR",1) > 0 THEN FOUND = FOUND+1
IF SYSTEM(14) > 0 THEN
  CRT "SO FAR, ":"FOUND:" ITEMS CONTAIN 'ERROR'"
```


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```
INPUT IGNORE,1 ;* Clear out buffered char
END
GO TO 100
END
```

As another example, here's a fragment of code that prompts for a yes or no, but only waits 60 seconds for an answer:

```
PROMPT ""
WAIT = 60 ;* SECONDS
PROMPT.TIME = TIME()
CRT "START THE BACKUP? Y OR N?":
LOOP
  IF SYSTEM(14) > 0 THEN GO TO 100
  UNTIL TIME() > (PROMPT.TIME+WAIT) DO
    RQM
  REPEAT
  * TIME IS UP
  ABORT
  100 INPUT ANSWER,1
```

SYSTEM(14) should also be a boon to game programs. As one final example of how input buffer testing can make programs more interactive, here's a version of the infamous SWAT program from *Pragma #4*, simplified so that the keyboard controls the user's position (not velocity as in the original program), but

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modified to make the fly swarm continuously on the screen:

```

XMAX = 79 ; YMAX = 23 ; * CRT maximums
YMAX = YMAX-1 ; * Leave room for control line
10 CRT @(-1) ; * Start new game
TRACING = 0 ; STEPS = 0
XUSER = INT(XMAX/5) ; YUSER = INT(YMAX/2)
XFLY = INT(XMAX/2) ; YFLY = YUSER
100 * Loop back to here for each move
CRT @(XFLY,YFLY):"%": ; * Show fly
VISIBLE = (0<=XUSER) & (XUSER<=XMAX)
          & (0<=YUSER) & (YUSER<=YMAX)
IF VISIBLE THEN ; * Human on screen, may be at fly
  CRT @(XUSER,YUSER):"%": ; * Show you
  IF (XUSER=XFLY) & (YUSER=YFLY) THEN
    CRT @(-1):"SWAT! (":STEPS:" steps.)" ; STOP
  END
END
CRT @(0,YMAX+1):"You're @(":XUSER:",":YUSER:)", " :
IF TRACING THEN CRT "tracing, " :
CRT "fly's @(":XFLY:",":YFLY:)" :
CRT "Your move? (1-9,Q,R,T)":@(-4) ; * Clear line
IF SYSTEM(14) THEN ; * Input waiting
  INPUT DIR,1 ; * Get move
  STEPS = STEPS+1
  IF VISIBLE THEN ; * Last position was on screen
    CRT @(XUSER,YUSER):
      IF TRACING THEN CRT ".": ELSE CRT " " :
    END
  BEGIN CASE
  CASE DIR=1 ; XUSER=XUSER-1 ; YUSER=YUSER+1
  CASE DIR=2 ; XUSER=XUSER+1 ; YUSER=YUSER-1
  CASE DIR=3 ; XUSER=XUSER+1 ; YUSER=YUSER+1
  CASE DIR=4 ; XUSER=XUSER-1 ; YUSER=YUSER-1

```

```

CASE DIR=6 ; XUSER=XUSER+1
CASE DIR=7 ; XUSER=XUSER-1 ; YUSER=YUSER-1
CASE DIR=8 ; XUSER=XUSER+1 ; YUSER=YUSER-1
CASE DIR=9 ; XUSER=XUSER+1 ; YUSER=YUSER-1
CASE DIR="Q" ; CRT @(-1):STEPS:" misses." ; STOP
CASE DIR="R" ; GO TO 10
CASE DIR="T" ; TRACING = NOT(TRACING)
END CASE
END
CRT @(XFLY,YFLY):" " :
XFLY = XFLY+RND(3)-1 ; YFLY = YFLY+RND(3)-1
IF XFLY < 0 THEN XFLY = 0
IF YFLY < 0 THEN YFLY = 0
IF XFLY > XMAX THEN XFLY = XMAX
IF YFLY > YMAX THEN YFLY = YMAX
CRT @(XFLY,YFLY):"%":
GO TO 100
END

```

Note how all of the above examples depend on single character input. That's because even though SYSTEM(14) tells you how many characters are waiting, it doesn't indicate whether a carriage return is present. Executing an INPUT statement just because characters have been buffered can still cause a program to hang, waiting for the final carriage return. The 3.0 release really should have also included a way of extracting buffered characters without depending on the INPUT statement.

In any case, we're duly impressed with the 3.0 release, both for the features it provides and especially for the speed improvement over the 2.1 release. Currently, our only major wish

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still left is for a LOCKED clause for READU statements, like Microdata (now McDonnell Douglas) has had for so many years. It's actually kind of amazing that many Pick-style systems (which are supposedly especially designed for typical data processing tasks like letting multiple users simultaneously access files) can only blindly hang inside a READU if a group is already locked by another port, instead of offering a LOCKED clause so that warning messages can be displayed and the operator can exit to do other work. A LOCKED clause that provides the port and account that are responsible for the lock would be especially useful. When it's worth the trouble, programmers can provide their own mechanism for detecting item locks by maintaining a file that keeps track of all items currently being updated. But every time a file item is read or written, that approach generates a lot of extra overhead just to support a feature that should be built into BASIC in the first place. Guess we'll just have to wait for the 4.0 release... Δ

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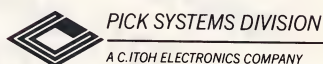
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